

REMARKS

IN THE SPECIFICATION:

Applicants respectfully note that the specification has been amended in order to correct multiple errors in spelling, punctuation and syntax.

At page 1, in line 21 a comma is ADDED AFTER the word “simple”. The change is made to correct the punctuation of the sentence.

At page 1, in line 23, the comma AFTER the word “characteristics” is DELETED and REPLACED with a period. The word “and” following the deleted comma is itself DELETED and a new sentence begun by CAPITALIZING the word “new”. The change is made to correct the punctuation and syntax of these sentences.

At page 1, in line 26, the punctuation of the sentence is corrected by ADDING a comma AFTER the word method.

At page 6, in line 4 the word “another” AFTER the word is “further” is DELETED. The change is made to correct the syntax of the sentence.

At page 6, in lines 9 and 15 the SPELLING of the word “forgoing” is CORRECTED to read “foregoing”.

At page 14, line 3 the word “dimension” is DELETED and REPLACED with the word -- dimensions --. The changes are made to correct the syntax of the sentence

At page 21, in line 17, the word “contain” AFTER the word “always” is DELETED and REPLACED with the phrase -- contains substantially the same volume of glass --. And the phrase -- as core rods 1003 are displaced -- is ADDED AFTER the word “rods” and BEFORE the period ending the sentence. Sentence fragment “contained within tube 1001 would be placed on its side before” is DELETED as superfluous. The change is made to better describe the Applicants’ invention. Support is found at page 21, line 5 of the written specification.

At page 22, in line 8 the comma following the word “processes” is DELETED. The change is made to correct the punctuation of that sentence.

At page 25, in line 5, a comma is INSERTED AFTER the italicized words “*by weight*” The change is made to correct the punctuation of that sentence.

No new matter has been added as a result of the forgoing amendments.

IN THE CLAIMS:

Claims 1 – 13, 28, 29, 33, 39, 41, 46 – 47 are requested canceled without prejudice.

Claims 14 – 18, 21, 40, 49 and 51 are amended.

IN CLAIM 14

In line 1 of the claim, the introductory phrase “The method of claim 1” is DELETED and the clauses -- A method for providing a glass preform for use as a source for drawing an optical fiber, the method comprising the steps of:

collecting a plurality of first glass rods into a substantially contiguous bundle, wherein each of said first glass rods comprise a chemical composition and a substantially uniform shape;

inserting said contiguous bundle into a glass tube, wherein said glass tube has an inside diameter chosen to contain said contiguous bundle, forming thereby a preform assembly;

removing and replacing one or more groups of contiguous first glass rods with an equivalent number of groups of contiguous second glass rods, --

are ADDED BEFORE the word “wherein”;

in line 3 the SPELLING of the word “perform” is CORRECTED to read -- preform --;

in line 3 the phrase -- wherein each of said second glass rods comprise a chemical composition and a substantially uniform shape,-- is ADDED AFTER the words and comma “preform assembly,”; and

in line 4, the clause -- , said step of removing and replacing further including inserting a stepped template against one end of each of said first glass rods, said stepped template having one or more steps or plugs, said steps or plugs acting to partially displace said one or more groups of first glass rods; and; and

heating said contiguous bundle to a glass fusion temperature and causing said contiguous bundle to fuse to form a solid glass preform such that said chemical composition of each of said first and said second glass rods is maintained in a location proximate to, or about coincident with, the position of each of said glass rods within said contiguous bundle --.

is ADDED AFTER the words “dopant elements” but BEFORE the period ending the sentence.

Support for these changes is found in intervening original claims 1 and 8 and 11.

IN CLAIM 15

In line 5 of the claim, the word “perform” BEFORE the words “core region” is MISPELLED. The word is amended to read -- preform --. Support is found at page 8, line 11; page 12, line 9; and page 21, line 17 of the written description.

IN CLAIM 16

In line 6 of the claim, the word “perform” BEFORE the words “core region” is MISPELLED. The word is amended to read -- preform --. Support is found at page 8, line 11; page 12, line 9; and page 21, line 17 of the written description.

IN CLAIM 17

In line 1 of the claim, the dependency of the claim is changed to -- claim 14 -- from “claim 9”. The change is necessitated by the amendment of claim 14 to include the limitations of claim 8 from which claim 9 depends.

IN CLAIM 18

In line 1 of the claim, the dependency of the claim is changed to -- claim 14 -- from “claim 9”. The change is necessitated by the amendment of claim 1 to include the limitations of claim 8 from which claim 9 depends.

IN CLAIM 21

In line 1 of the claim, the dependency of this claim is changed from “2” to -- 14 --. The change is necessitated due to the amendment of claim 14 which previously depended from claim 11 which in turn referred to “said tube”.

IN CLAIM 40

In line 1 of the claim, the introductory phrase “The method of claim 39” is DELETED and the clauses -- A method for providing a glass preform for use as a source for drawing an optical fiber, the method comprising the step of:

providing first and second quantities of glass rods, wherein each of said glass rods has a substantially uniform shape, said first quantity comprising one or more rare-earth dopant elements, said second quantity comprising first and second refractive indices, wherein said first refractive index is greater than a target refractive index, and said second refractive index is less than said target refractive index;

collecting said first quantity of glass rods into a substantially contiguous bundle of rods and forming thereby a first bundle, said first bundle for forming a preform core region having a substantially uniform radial and longitudinal chemical composition;

uniformly surrounding said first bundle with said second quantity of glass rods forming thereby a contiguous and substantially concentric cylindrical annulus about said first bundle, wherein said first and second refractive indices are distributed throughout said cylindrical annulus so as to provide an average refractive index within said cylindrical annulus substantially equal to said target refractive index, said second quantity of glass rods forming a cylindrical preform cladding region surrounding said preform core region to provide a glass preform bundle;

inserting said glass preform bundle into a glass tube wherein said glass tube has an inside diameter chosen to contain said glass preform bundle, and --

are ADDED BEFORE the word “wherein”; and in line 4 of the claim, AFTER the word “plug” but BEFORE the period ending the sentence, the clause, -- ; and

heating said glass tube and said glass preform bundle to a glass fusion temperature thereby causing said glass tube and said glass preform bundle to fuse in place to form a solid glass preform such that said preform core region radial and longitudinal chemical composition and said cladding region average refractive index are maintained --

are ADDED. The changes are made to incorporate the limitations of claim 39 into present claim 40. Support is found in original claim 39.

IN CLAIMS 42, 49 AND 51

In line 1 of these claims, the dependency of the claim is changed to -- claim 40 -- from “claim 39”. The change is necessitated by the cancellation of claim 39 and the amendment of claim 40 to include the limitations of claim 39.

No new matter has been added as a result of the forgoing amendments.

REJECTION UNDER 35 U.S.C. §112

Examiner's §2

Claims 11 – 16, 28 and 41 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as their invention.

In particular, claim 11, line 3 refers to “said glass tube”. Examiner notes that it is unclear if the error is that claim 1 is suppose to recite a tube, or if claim 8 or claim 11 should have read “a glass tube”. Examiner requires clarification and correction.

Claim 28 refers to “second rods” but there is not prior mention of such “second rods”. Examiner requires clarification and correction.

Claim 41 refers to “said porous packing plug” but there is not prior mention of such “said porous packing plug”. Examiner requires clarification and correction.

Applicants' Response

Claims 1 – 51 are pending in the application.

Applicants thank the Examiner for his remarks and respectfully acknowledge these errors.

Applicants have amended claim 1 to include the limitations of claim 2 (and have likewise amended claim 14 to include these same limitations). By amending these claims Applicants argue they have removed the indefiniteness of claim 11, and those claims depending from claim 11. Applicants therefore respectfully request reconsideration and withdrawal of the rejection in claim 11.

Applicants have respectfully requested cancellation of claims 28 and 41 and, therefore, have removed the ground for the rejection of these claims.

REJECTION UNDER 35 U.S.C. §102

Examiner's §3

Claims 1 – 51 are pending in the application.

I. Claims 1, 4, 5, 7, and 29 are rejected under 35 U.S.C. §102(b) as being anticipated by Hopkins, et al., (U.S. Patent Serial Number 3,395,006). Examiner argues that Hopkins, et al., ('006) “clearly show all the limitations of claim 1 in Figures 1, 4, and 8”. Examiner also argues that regarding claim 4 “It is deemed that an average index of the preform, is substantially that of

an individual rod (col. 3, lines 34 – 42) and that the average index is predetermined by the glass rod chosen. The average index is inherently between the index of the core and the index of the clad.”

Regarding claim 5 Examiner refers to Figure 4.

Regarding claim 7, Examiner argues “one can arbitrarily divide the bundle into two groups. The group does have a first index, and the second group has a second index. Of course the first group also has a second index and the second group has a first index. The claims are comprising in nature and are open to having additional indices. The “target” index is the average index.”

Regarding claim 29 Examiner refers to col. 8, line 37.

II. Claims 1, 4, and 6 are rejected under 35 U.S.C §102(e) as being anticipated by Allen, et al., (U.S. Patent Serial Number 6,243,522). Examiner argues that the drawings and Example 1 (starting at col. 7) disclose the invention. Examiner also argues that, as per the Hopkins, et al., ('006) rejection, the Allen, et al., average index is predetermined by the starting rods that are used.

III. Claims 1, 8 – 9, 11 – 13, and 33 are rejected under 35 U.S.C §102(b) as being anticipated by Sink, (U.S. Patent Serial Number 4,853,020). Examiner appears to argue that Figure 2 and the disclosure at col. 2, lines 33 – 50 read on claim 1 of the present invention. Regarding claims 8 – 9, Examiner refers to col. 3, lines 43 – 51 and argues that one can arbitrarily divide the Sink rods into any reasonable number of groups of rods, for example the first, third, fifth...fibers is [sic] the first group and the second fourth, sixth...group.

Regarding claim 11: First it is noted that from Applicant's claim 13 that the template is not a single structure. It is further noted that the claim does not require the displacement to be simultaneous. A group of rods may be displaced, one rod at a time. It is deemed that one can view Sink's replacement rods to be the template. The rods are partially displaced prior to being fully displaced. Looking at Applicant's figure 10 (not 10A or 10B), the structure of 1004 just shows a simple flat displacement structure, no step is actually within the tube 1001. 1004 has a shallow step. In the Sink method, one must apply a force to the end of the replacement rod – that force would be applied with some structure. The replacement rod forms a “step” with respect to the pressure-applying structure. To summarize: Applicant's figure 10 shows fibers being simultaneously displaced with a shallow, single-unit template; Sink displaces fibers sequentially with a deep, multi-fiber template.

Regarding claims 12-13 further define the plugs; however, the claim 11 does not require plugs. There can be steps instead of plugs; claims 12-13 do not further limit the steps. Sink has steps, not plugs. Since Claims 12-13 do not further limit the steps embodiment, they do not require any more limitations than claim 11 does for the steps embodiment. Sink reads on the steps embodiment, and thus anticipate the claims 12-13.

Regarding claim 33: As to the "two or more different refractive indices" first it is noted that the claim does not require any think [sic] to have the two or more different indices. The broadest possible interpretation is that this group has all possible indices – from 1 to that which is highest now. Thus, no matter what the final index/indices is, it will be within the range spanned by those refractive indices. Referring to figure 3 of Sink, it is clear that all of the "M" fibers would have the same (i.e., average) index. It is noted that this average is one possible average; i.e., there are other fibers in the bundle that would not be part of this average. Alternatively, one can calculate the average core index of the inner fibers – or the average clad index of the inner fibers – or any other average that one chooses. It is noted that the claims are comprising in nature and are open to additional rods that do not have the "average" index and the chemical composition. And the rods are open to having additional compositions and/or indices. So, although the inner rods probably have indices that are not the same as the average, such does not matter because they have additional glass which has the same index as the average. And that is because the rods in any group are identical – and thus would have identical indices. The average index of identical indices would be the same as the index of any one of the identical indices.

IV. Claims 1, 2, and 21, 28 are rejected under 35 U.S.C §102(b) as being anticipated by Scott, Jr., et al., (U.S. Patent Serial Number 6,243,522). Examiner argues that Scott, Jr., et al., ('955) clearly discloses the invention of claim 1 and refers to col. 3, lines 13 – 14 as to claim 2. Regarding claim 21 Examiner argues that features 7 and 8 (screens) are deemed to read on porous packing plugs. Regarding claim 28 Examiner argues that the Scott, Jr., et al., disclosure at col. 2, lines 58 – 62 could make an arbitrary plurality of about 7 rods having an effective diameter of about 2.4 mm which would lead to about 860 fibers packed into a 1 inch diameter tube: clearly falling within the claimed range of 30 to 30,000 fibers..

V. Claim 39 is rejected under 35 U.S.C §102(e) as being anticipated by Wang, (U.S. Patent Serial Number 6,418,258). Examiner argues that Wang, ('258) discloses the invention at col. 10, lines, 45 – 60; that the specific assembly steps are discloses [sic] as per the paragraph

Applicants' Response

Applicants thank the Examiner for his remarks and his allowance of claims 34 -36, and 38 and for noting the allowability of claims 14 – 20, 22 – 27, 31, 32, 40, 42 – 45, 49, and 51 providing the base claim is re-written in independent form to include all of the limitations of the base claim and all of the intervening claims from which these claims depend. Applicants have amended claims 14, 17, 18, 40, 42, 49, and 51 to include the limitations of the respective base claims and all intervening claims, respectively.

Applicants have also amended rejected claim 21 to depend from amended claim 14, given that allowable claims 22 – 27 which depend from claim 21, and that claims 21 – 27 depend originally from rejected claims 1 and 2 but not from allowable claim 14. Applicants therefore respectfully request that the Examiner also allow claim 21 as amended to include the limitations of amended claim 14. Do to the amendment

Applicants respectfully cancel remaining claims 1 – 13 in an effort to place the current application in condition for allowance. Applicants will continue the prosecution of these claims, and argue for patentability, in a Continuing Application under 35 U.S.C. §120.

Applicants therefore assert that through their amendments they have placed claims 14 – 27, 31, 32, 34 – 36, 38, 40, 42 – 45, 49 and 51 in condition for allowance and respectfully request the Examiner to reconsider and withdraw his rejection in claim 21 and his objections in the remaining claims and pass these claims to allowance.

REJECTION UNDER 35 U.S.C. §103

Examiner's Page 7

Claims 1 – 51 are pending in the application.

I. Claims 2, and 3 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hopkins, et al., (U.S. Patent Serial Number 3,395,006). Examiner urges Applicants to see how the art is applied above. Hopkins, et al., ('006) does not disclose that the bundle is made prior to inserting into the tube. See *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); *in re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious). It would have been obvious to make the sheathed bundle by adding the fibers simultaneously, rather than one by one.

Claim 3 Figures 6 and 8 show the progression along the length.

Claims 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in that the Examiner argues "Wang does not teach the size limitations of the claims. It would have been obvious to make the starting fibers as large and as numerous as desired – depending upon the amount of final product is desired – with no new or unexpected results."

Applicants' Response

Applicants thank the Examiner for his remarks. Applicants, however, have herein requested cancellation of claims 2, 3 46, and 47 and therefore, have removed the grounds for the rejection under 35 U.S.C. 103(a). Applicants, therefore, respectfully urge the Examiner to reconsider and withdraw his rejection.

CONCLUSION

In summary, Applicants asserts that with the cancellation of claims 1 – 13, 28, 29, 33, 39, 46, and 47 they have cured the rejections under 35 U.S.C. §102 and §103 have shown that the instant invention claims a unique apparatus and method that is neither anticipated, suggested nor taught by the prior art. Favorable reconsideration of claims now presented and allowance of this application is earnestly solicited.

This response is, therefore:

P.O. Box 969, MS 9031
Livermore, CA 94551-0969
Telephone (925) 294 - 3690

Respectfully submitted by,
SANDIA NATIONAL LABORATORIES


Timothy Evans, Agent
Registration No. 41,013

CERTIFICATION UNDER 37 CFR 1.8

I hereby certify that this New Application Transmittal and the documents referred to as enclosed therein are being deposited with the U. S. Postal Service on **MAY 5, 2003**, as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Deposit: 5 May 03

Michael M. Morris
Person Making Deposit
Michael M. Morris
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